

IN THE CLAIMS:

Claim 1 has been amended, claims 12, 13 and 22 have been canceled, and new claims 26-28 have been added.

1. (Currently amended). In a building, a roof structure comprising an essentially non-load supporting, vertically extending central column having a lower end spaced above a supporting structure of said roof structure; and

a plurality of at least three elongated and vertically inclined, multi-element trusses fixedly joined on innermost ends thereof to said central column and being rotationally displaced from one another in a horizontal plane, each of said trusses extending radially outwardly and downwardly from said central column to an outer end portion thereof for mounting on a weight bearing supporting structure at a level spaced above the supporting surface of said building and below the lower end of said column, said plurality of trusses thereby defining a roof structure in the form of a cone shaped polygon,

wherein each of said trusses comprises an upper beam which is vertically inclined at a first angle relative to horizontal and a lower beam disposed below said upper beam which is inclined at a second angle relative to horizontal, said first angle being greater than said second angle such that corresponding ends of said upper beam and said lower beam at an innermost end of each of said trusses are vertically spaced apart to a greater extent than are opposite corresponding ends of said upper beam and said lower beam at an outermost end of each of said

trusses and are fixed in position relative to upper and lower end portions of said central column, respectively.

2. (Original). The building of Claim 1 wherein each of said multi- element trusses is rotationally displaced in said horizontal plane from adjacent ones of said trusses by essentially the same angle of displacement.

3. (Original). The building of Claim 1 wherein each of the said multi-element trusses comprises

an elongate upper beam;

an elongate lower beam spaced below said upper beam;

a plurality of vertically extending spacer members radially spaced apart and connected between said beams to form a series of truss sections between adjacent ones of said spacer members; and

a series of diagonally extending elongate reinforcing members, a different one of said reinforcing members being disposed in each of said truss section, each of said reinforcing members being connected on a lower, radially outer end thereof to an intersection between said lower beam and one of said spacer members on a radially outer end of a corresponding one of said truss sections, and being connected on an upper, radially inner end thereof to an intersection between said

upper beam and one of said spacer members on a radially inner end of said corresponding one of said truss sections.

4. (Original) The building of Claim 1 wherein each of said trusses comprises a plurality of beams made of hollow box tubing.

5. (Original). The building of Claim 1 wherein each of said trusses comprises, an elongate upper beam inclined at a first vertical angle relative to horizontal and an elongate lower beam disposed under said upper beam, said upper beam being connected to said lower beam by a series of vertically extending and radially spaced apart spacer members forming a series of truss sections between adjacent ones of said spacer members, said lower beam being inclined at a second vertical angle relative to horizontal which is less than said first angle.

6. (Original). The building of Claim 1 wherein said weight bearing support comprises a plurality of elongate posts equal to said plurality of trusses, each of said posts supporting said outer end portion of a different one of said trusses.

7. (Original). The building of Claim 1 wherein said roof structure further comprises a series of radially spaced apart cross-braces adjoined on opposite end portions thereof between adjacent pairs of said trusses.

8. (Original). The building of Claim 3 wherein said upper beam is inclined at a first vertical angle relative to horizontal and said lower beam is inclined at a second vertical angle relative to horizontal, said second angle being less than said first angle.

9. (Original). The building of Claim 3 wherein said roof structure further comprises a first series of radially spaced apart cross-braces adjoined on opposite end portions thereof between adjacent pairs of said lower beams.

10. (Original). The building of Claim 3 wherein said roof structure further comprises a second series of radially spaced apart cross-braces adjoined on opposite end portions thereof between adjacent pairs of said upper beams.

11. (Original). The building of Claim 3 wherein said roof structure further comprises a first series of radially spaced apart cross- braces adjoined or opposite end portions thereof between adjacent pairs of said lower beams and a second series of radially

spaced apart cross-braces adjoined on opposite end portions thereof between adjacent pairs of said upper beams.

12. (Canceled).

13. (Canceled).

14. (Original). The building of Claim 3 wherein said series of truss sections is four.

15. (Original). The building of Claim 3 wherein said upper beam, said lower beam, said spacer members and said reinforcing members of each of said trusses are constructed of hollow box tubing.

16. (Original). The building of Claim 8 wherein said first angle is about 22 degrees and said second angle is about 16 degrees.

17. (Original). The building of Claim 9 wherein said first series of cross-braces comprises elongate steel angle iron members.

18. (Original). The building of Claim 10 wherein said second series of cross-braces comprises elongate wood boards.

19. (Original). The building of Claim 17 further comprising a series of overhanging steel plates attached on a central portion thereof to each of said lower beams, said first series of angle iron members being joined to said plates by fasteners.

20. (Original). The building of Claim 18 further comprising a series of saddle hangers attached to each of said upper beams, end portions of each of said wood boards being disposed in and fastened to a different one of said saddle hangers.

21. (Previously presented) The building of Claim 3 wherein said upper beam is inclined at a first vertical angle relative to horizontal.

22. (Canceled)

23. (Previously presented). The building of Claim 22 where each of said trusses further comprises a vertically extending spacer member connected on opposite end portions to and extending between corresponding ends of said upper beam and said lower beam at said innermost end, said spacer member also being connected on opposite end portions to said central column.

24. (Previously presented). The building of Claim 23 wherein said spacer member is removably connected to said central column.

25. (Previously presented). The building of Claim 23 wherein said spacer member is connected to said central column by means of at least three nut and bolt combinations, a first one of said combinations adjoining an upper end portion of said spacer member to an upper end portion of said central column immediately below an intersection of said upper beam with said spacer member, the other two of said combinations adjoining a lower end portion of said spacer member with said central column immediately above and below an intersection of said lower beam with said spacer member.

26. (New) In a building, a roof structure comprising an essentially non-load supporting, vertically extending central column having a lower end spaced above a supporting structure of said roof structure; and
a plurality of at least three elongated and vertically inclined, multi-element trusses fixedly joined on innermost ends thereof to said central column and being rotationally displaced from one another in a horizontal plane, each of said trusses extending radially outwardly and downwardly from said central column to an outer end portion thereof for mounting on a weight bearing supporting structure at a level spaced above the supporting surface of said building and below the lower end of said column, said plurality of trusses thereby defining a roof structure in the form of a cone shaped polygon

wherein each of the said multi-element trusses comprises

an elongate upper beam;

an elongate lower beam spaced below said upper beam;

a plurality of vertically extending spacer members radially spaced apart and connected between said beams to form a series of truss sections between adjacent ones of said spacer members; and

a series of diagonally extending elongate reinforcing members, a different one of said reinforcing members being disposed in each of said truss section, each of said reinforcing members being connected on a lower, radially outer end thereof to an intersection between said lower beam and one of said spacer members on a radially outer end of a corresponding one of said truss sections, and being connected on an upper, radially inner end thereof to an intersection between said upper beam and one of said spacer members on a radially inner end of said corresponding one of said truss sections

wherein a radially outer end portion of each of said upper beams projects outwardly beyond a corresponding outermost one of said spacer members, an outer end of each of said upper beams being connected to an angular intersection between two adjoining mounting plates, a series of elongate wood board trim members being connected on end portions thereof to said mounting plates to form a polygonal peripheral border around said roof structure.

27. (New) In a building, a roof structure comprising an essentially non-load supporting, vertically extending central column having a lower end spaced above a supporting structure of said roof structure; and

a plurality of at least three elongated and vertically inclined, multi-element trusses fixedly joined on innermost ends thereof to said central column and being rotationally displaced from one another in a horizontal plane, each of said trusses extending radially outwardly and downwardly from said central column to an outer end portion thereof for mounting on a weight bearing supporting structure at a level spaced above the supporting surface of said building and below the lower end of said column, said plurality of trusses thereby defining a roof structure in the form of a cone shaped polygon,

wherein each of the said multi-element trusses comprises

an elongate upper beam;

an elongate lower beam spaced below said upper beam;

a plurality of vertically extending spacer members radially spaced apart and connected between said beams to form a series of truss sections between adjacent ones of said spacer members; and

a series of diagonally extending elongate reinforcing members, a different one of said reinforcing members being disposed in each of said truss section, each of said reinforcing members being connected on a lower, radially outer end thereof to an intersection between said lower beam and one of said spacer members on a radially outer end of a corresponding one of said truss sections, and being connected on an upper, radially inner end thereof to an intersection between said upper beam and one of said spacer members on a radially inner end of said corresponding one of said truss sections

wherein a radially outer end portion of said upper beam projects radially outwardly beyond a radially outermost one of said spacer members, the radially outermost one of said spacer members extending vertically downwardly below a radially outer end of said lower beam, a lower end portion of the radially outermost one of said spacer members located below said lower beam being attached to said weight bearing support.

28. A building structure having a non-load bearing central member connected to radially spaced trusses, each of said trusses extending below said central member so that an outer end portion of each said trusses engages a support structure, wherein each of said trusses is comprised of upper and lower support beams, said upper support beams being spaced from said lower support beams where said upper and lower support beams intersect said central member.